JP Maths Revision

Attempt the paper before watching the solutions https://www.youtube.com/@JPMathsRevision

Based on Edexcel GCSE (9-1)

May 2026 Predicted Paper

Time: 1 hour 30 minutes

Mathematics
PAPER 1 (Non-Calculator)
Higher Tier

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You must **show all your working.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information

- The marks for **each** question are shown in brackets- *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages of your working.

1. Solve the inequality

$$5 - 2x \geq 13$$

.....

(Total for Question 1 is 2 marks)

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2. Find the lowest common multiple (LCM) of 28 and 42.

.....

(Total for Question 2 is 3 marks)

3. The first four terms of a sequence are

12, 9, 6, 3, . . .

(a) Find an expression for the nth term of the sequence.

.....

(2)

(b) Hence, find the 20th term of the sequence

.....

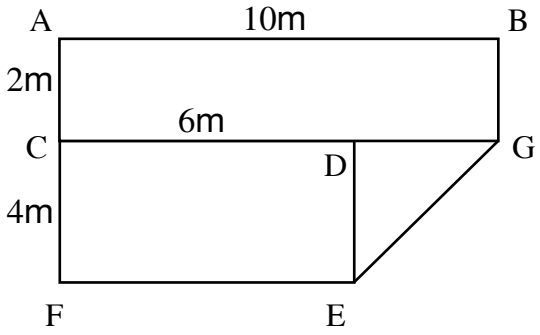
(2)

(Total for Question 3 is 4 marks)

4. Below is a plan of a field.

ABCD and CDEF are rectangles.

EDG is a right angled triangle.



The field is split into path and grass in the ratio 1:3.

Grass is sold in packs that cover $6m^2$.

Each pack of grass costs £9.

Work out the total cost of buying enough packs to cover the grass.

£ .....

(Total for Question 4 is 4 marks)

5. A metal cube has a surface area of $96cm^2$.

The density of the metal is 7 g/cm^3.

Work out the mass of the cube.

..... g

(Total for Question 5 is 3 marks)

6. Tom and Ben share some money in the ratio 3 : 7.

Ben receives £40 more than Tom.

Ben then gives 20% of his share to his friend Eric.

How much money does Eric receive?

£ .....

(Total for Question 6 is 4 marks)

7. Amira is baking cookies for a school fete.

Her delivery box contains:

- 5 identical bags of chocolate chips
- 0.6 kg of packaging.

Each bag of chocolate chips has a mass of x grams.

The total mass of the delivery box is 2.1 kg.

The cookie recipe Amira is using requires 450 g of chocolate chips.

Amira says,

"I will only need to open 2 of the bags."

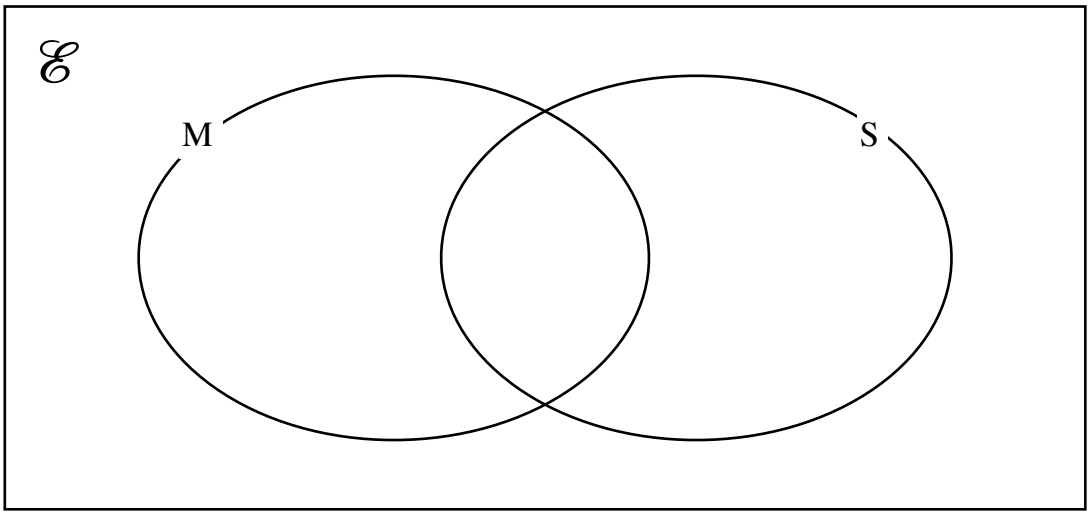
Is Amira correct? You must show your working.

(Total for Question 7 is 4 marks)

8. In a group of 50 students:

- 28 study Maths (M)
- 24 study Science (S)
- 10 study both Maths and Science

(a) Complete the Venn diagram.



(3)

(b) A student is chosen at random. Write down $P(M \cap S)$

.....

(1)

(Total for Question 8 is 4 marks)

9. The table shows information about the time students spent revising for a maths test.

Time, t (minutes)	Frequency
$0 \leq t < 10$	3
$10 \leq t < 20$	5
$20 \leq t < 30$	7
$30 \leq t < 40$	x

The mean time spent revising is estimated to be 22 minutes.

Find the value of x.

.....

(Total for Question 9 is 4 marks)

10. The equation of line L is

$$3y + x = 12$$

Line M is perpendicular to line L.

Line M passes through the point $(2, 7)$.

Find the equation of the line M.

Give your answer in the form $y = mx + c$

.....

(Total for Question 10 is 3 marks)

11 (a) Find the value of $16^{\frac{3}{4}}$

.....

(2)

(b) Hence, write down the value of $16^{-\frac{3}{4}}$

.....

(1)

(Total for Question 11 is 3 marks)

12. Solve the simultaneous equations

$$3x - 2y = 17$$

$$2x - y = 1$$

$x =$ .....

$y =$ .....

(Total for Question 12 is 4 marks)

13. The functions f and g are defined as

$$f(x) = 2x + 3$$

$$g(x) = x^2 - 1$$

(a) Find $f(4)$.

.....

(1)

(b) Find $g(-2)$.

.....

(1)

(c) Find $f(g(x))$.

.....

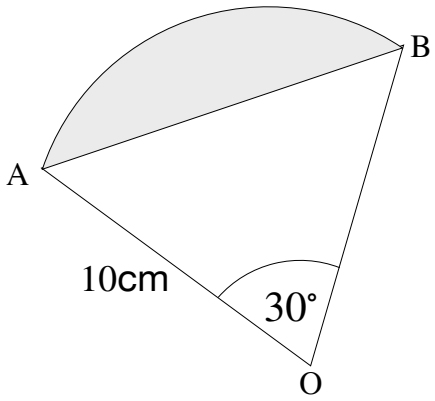
(2)

(Total for Question 13 is 4 marks)

14. A sector of a circle has radius 10 cm and angle 30°.

Points A and B lie on the circumference and O is the centre.

The shaded region is the segment formed by the sector and the triangle AOB.



Show that the area of the shaded region is $\frac{a\pi}{3} - b$ cm^2, where a and b are integers to be found.

(Total for Question 14 is 4 marks)

15. The third term of a geometric sequence is $8\sqrt{8}$.

The fifth term is $64\sqrt{2}$.

Given that all terms of this sequence are positive,

Find the first term of the sequence, giving your answer in the form $a\sqrt{2}$.

.....

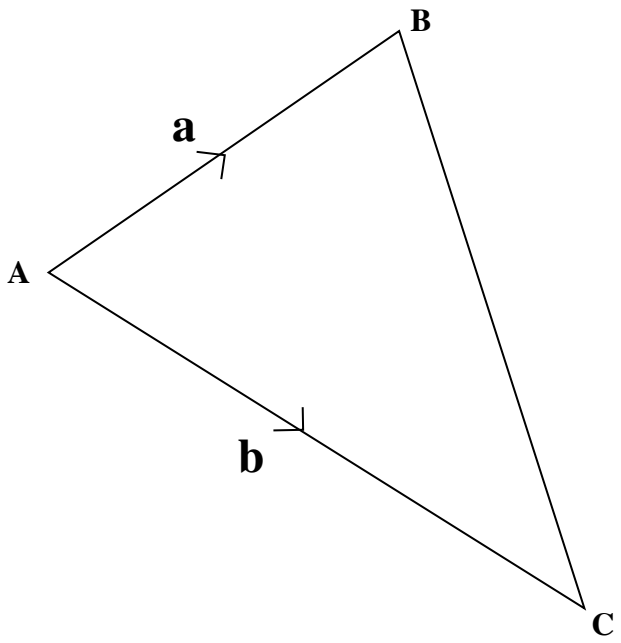
(Total for Question 15 is 3 marks)

16. Points A, B and C are points on a triangle.

$\overrightarrow{AB} = \mathbf{a}$

$\overrightarrow{AC} = \mathbf{b}$

Point D lies on BC such that $BD : DC = 1 : 2$



Find the vector $\overrightarrow{AD}$.

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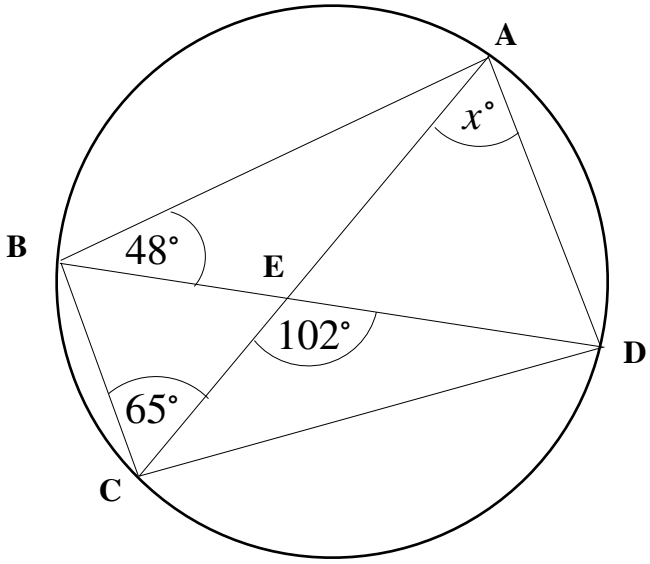
(Total for Question 16 is 4 marks)

17. Points A, B, C and D lie on the circumference of a circle.

Chords AC and BD intersect at point E.



Angle ABE = 48°

Angle BCE = 65°

Angle CED = 102°

Find the size of the angle marked x.

You must give reasons for your answer.

°

.....

(Total for Question 17 is 4 marks)

18. Find the coordinates of the turning point of the curve with equation $y = 12 - 8x - 2x^2$

.....

(Total for Question 18 is 4 marks)

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19. y is directly proportional to x^2.

x is directly proportional to z.

When $z = 2$, $y = 32$.

Find the value of y when $z = 5$.

.....

(Total for Question 19 is 5 marks)

20. The product of two consecutive even positive integers is greater than 120.

Find the smallest possible pair of integers.

....

(Total for Question 20 is 5 marks)

21. A bag contains red counters and blue counters.

The number of red counters is x.

The number of blue counters is 4.

Two counters are taken at random without replacement.

The probability that both counters are red is $\frac{1}{3}$.

(a) Show that $x^2 - 5x - 6 = 0$.

(3)

(b) The two counters are placed back in the bag and n counters are taken. Find the smallest value of n such that the counters selected must contain art least one of each colour.

.....

(2)

(Total for Question 21 is 5 marks)

TOTAL FOR PAPER IS 80 MARKS